

REMARKS

Applicants submit this Amendment in reply to the Final Office Action mailed May 2, 2006. At the outset, Applicants propose to amend claims 135 and 154 to remove the limitation “a substantial part of.” Support for the changes in claims 135 and 154 may be found in the specification, for example, on page 11, lines 19-22. Accordingly, Applicants submit that their proposed changes to claims 135 and 154 do not raise new issues requiring further consideration by the Examiner.

Currently, claims 39-62 and 111-158 are pending. After entry of Applicants’ proposed amendment claims 39-62 and 111-158 will be pending in the above-captioned application.

Claim Objections

In the Final Office Action mailed May 2, 2006, the Examiner objected to claims 39-62 because claims 39 and 58 were given the identifier “previously presented” but failed to include the subject matter added in the amendment filed on July 14, 2005. Applicants have reinserted the language “wherein the longest transversal groove of the axially opposed group of transversal grooves extends from one of said axially opposed shoulder zones and terminates at a location between the equatorial plane and the sidewall opposite said one of the axially-opposed shoulder zones” into claims 39 and 58 (see claim 39, lines 27-29 and claim 58 , lines 34-46) . Therefore, this objection is now moot.

Claim Rejections Under 35 U.S.C. § 112, first and second paragraph

In the Final Office Action mailed May 2, 2006, the Examiner rejected claims 135-158 under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement because the subject matter “a substantial part of” stresses imparted to the substantially-continuous tread portions are discharged along the axis. The Examiner also

rejected claims 135-158 under 35 U.S.C. § 112, second paragraph, on similar grounds. Claim 135 and 154 have been amended so that they no longer recite the limitation “a substantial part of.” Therefore, the rejection is now moot.

Claim Rejections Under 35 U.S.C. § 103(a)

In the Final Office Action mailed May 2, 2006, the Examiner rejected the claims under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,011,552 to Hoover (“Hoover”) in view of U.S. Patent No. 4,446,902 to Madec et al (“Madec”).

The Examiner also repeated the rejections set forth in October 4, 2005 Office Action. Namely, the Examiner continues to reject claims 39-53, 55-58, 61-62, 111-125, 127-130, 133-149, 151-154, and 157-158 under 35 U.S.C. § 103 (a) as being unpatentable over Japanese Patent Publication No. 4-1544408 (Japan ‘408), in view of Great Britain Patent No. 2,224,472 (“Great Britain ‘472”), Japanese Patent Publication No. 6-247,109 (“Japan ‘109”), alleged admitted prior art (specification page 3, lines 1-5)(“AAPA”), and optionally U.S. Patent No. 2,104,532 to Sommer (“Sommer”). The Examiner also continues to reject claims 60, 132, and 156 under 35 U.S.C. § 103 (a) as being unpatentable over Japan ‘408 in view of Great Britain ‘472, Japan ‘109, AAPA and optionally Sommers, and further in view of European Patent Application No. 722,851 to Guspodin et al. (“Guspodin”). In addition, the Examiner maintained the rejection of claims 39-53, 55-58, 111-125, 127-130, 135-149, and 151-154 under 35 U.S.C. § 103 (a) as being unpatentable over Sommer in view of Great Britian ‘472, AAPA, and optionally at least one of U.S. Patent No. 1,996,418 to Hargraves (“Hargraves”) and Japan ‘109, as well as the rejection of claims 54, 126, and 150 under 35 U.S.C. § 103 (a) as being unpatentable over Sommer in view of Great Britain ‘472, AAPA, and optionally at least one of U.S. Patent No. 1,996,418 to Hargraves and Japan ‘109, and further in view of European Patent Application No.

565,270 to Himuro (“Himuro”). In addition, the Examiner maintained the rejection of claims 59-62, 131-134 and 155-158 under 35 U.S.C. § 103 (a) as being unpatentable over Sommer in view of Great Britian ‘472, AAPA, and optionally at least one of Hargraves and Japan ‘109, and further in view of Guspodin.

Applicants respectfully traverse each of the above noted rejections of claims 39 -62 and 111 - 158. Applicants respectfully submit that independent claims 39, 58, 111, 130, 135 and 154 are not obvious over the applied references, at least for the reasons already of record and the reasons discussed below.

To establish a prima facie case of obviousness over a single reference or a combination of references, the Examiner “bears the initial burden of factually supporting any prima facie conclusion of obviousness.” *Cf. In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Specifically, the Examiner must prove such a desire to combine references with “substantial evidence” that is a result of a “thorough and searching” factual inquiry. *In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002). The Federal Circuit has on numerous occasions stated that to establish a prima facie case of obviousness an Examiner must show that the references, taken alone or in combination, (1) teach all the present claim limitations; (2) would have suggested to or provided motivation for one of ordinary skill in the art to make the claimed invention; and (3) would have provided one of ordinary skill with a reasonable expectation of success in so making. *See In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991) (*citing In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988)). “Both the suggestion and the reasonable expectation of success must be found in the prior art reference, not in the applicant’s disclosure.” *In re Vaeck* at 1442 (emphasis added).

With respect to the Examiner's rejection of claims 135-141, 146, 149, 152 and 153 under 35 U.S.C. § 103(a) as being unpatentable over Hoover in view of Madec, the Examiner alleges that Hoover discloses treads in which "a substantial part of stressing imparted to the ribs ... are discharged along the axis." See Office Action, page 4. Hoover, therefore, fails to teach the claimed "substantially-continuous tread portion [ending] at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves"(emphasis added). In Figure 1 of Hoover, however, the third rib from the top does not end at the same transversal groove as the other two ribs above it. Therefore, Hoover does not meet the claimed limitation.

Madec is cited for the disclosure of the curvature ratio (Office Action at 4) but also fails to teach the claimed "wherein each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves" (emphasis added), as recited in claim 35. Accordingly, claim 135 is allowable over the Examiner's proposed combination of Hoover and Madec.

The remaining rejections set forth at paragraphs 8-12 of the Final Office Action are identical to those set forth in the October 4, 2005 Office Action. Accordingly, Applicants maintain that claims 39-62 and 111-158 are allowable over the cited references at least for the reasons set forth in Applicants' Amendment dated February 2, 2006, and submit that claims 39-62 and 111-158 are allowable for the following additional reasons.

The Examiner alleges that Japan 408 teaches diagonally extending continuous parallel grooves 4 from the center region to shoulder regions instead of using straight circumferential grooves, and this invention of Japan '408 is not being modified. See Office Action at 19. The Examiner also alleges that Japan '408 attaches no importance and criticality to making the grooves 4 form wave shaped grooves 7 that cross the centerline in a zigzag manner. Id.

Applicants respectfully disagree since, as explained in the specification of Japan 408, the key features of the invention disclosed in this reference are that a plurality of parallel continuous grooves 4 are diagonally extended from the center region 2 to shoulder regions 3 in a manner such that the inner-end sides of the block 5 rows surrounded by the grooves 4 cross one another at the center region 2 in unit of one or multiple blocks in the shapes of “^” in the tire’s rotating direction, which arrangement necessarily implies that a plurality of the continuous grooves 4 are made to form wave-shaped grooves 7 that cross the center line in zigzag manner (see claim 1 and description at page 6, last paragraph of the English translation of Japan ‘408). Contrary to what the Examiner alleges, therefore, the proposed modification to Japan ‘408 would critically alter the key features of the tire of Japan ‘408 rendering the same inoperable for its intended purpose.

The Examiner further contends that each groove 4 “fails to continue so as to intersect the tread edge defined by width W on the other side of the tread at the same angle theta of 10-20 degrees.” See Office Action at 21. Japan ‘408, however, clearly shows multiple parallel continuous grooves 4 running from the central portion to both shoulder portions on the tread, to form rows or groups of parallel blocks 5 enclosed by the continuous grooves 4. Additionally the continuous grooves 4 of Japan ‘408 shown in the figures terminate in the shoulder portion and not at a location prior to the shoulder zone, and the continuous grooves 4 of Japan ‘408 shown in Figures 1-4 do not terminate at a predetermined distance from the equatorial groove portion of any axially-opposed transversal groove.

Therefore, in addition to reasons set forth in Applicants Amendment dated February 2, 2006. Japan ‘408 fails to disclose at least “that each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves;” (claims 39, 58, 111, 130, 135, and 154) “that each of the transversal

grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves so that all of the transversal grooves end within the equatorial zone” (claims 39, 58, 111, 130, 135, and 154) so that “the substantially-continuous tread portions extend from said axially-opposed shoulder zones towards the equatorial plane of the tire to form a structurally stiff grid of elastomeric material portions fitted in with one another”(claim 111 and 130) (emphasis added).

Great Britain ‘472 also fails to teach or suggest the above noted claimed features . The Examiner alleged that “with respect to the claim limitation ‘fitted in with one another’, the original specification would disclose obtaining this construction by omitting circumferential grooves and Great Britain ‘472 and Japan ‘109 would provide ample motivation to omit all circumferential grooves.” See Office Action at 19.

However, the Applicants’ specification does not offer such a teaching but, to the contrary, teaches that in preferred embodiments of the claimed tire the latter may further comprise: a couple of longitudinal slots or “disconnection grooves”, preferably extending from opposite parts of the equatorial plane of the tire on said shoulder zones throughout the whole circumferential development of the tread, and a couple of longitudinal continuous slits circumferentially extending in the shoulder zone and on either side of the equatorial plane of the tire (Specification, page 12, lines 3-24; page 19, lines 12-24 and figures 1-3).

Thus, contrary to what the Examiner alleges, the formation of a structurally stiff grid of elastomeric material portions fitted in with one another is unrelated to the omission of circumferential grooves. Instead, the formation of structurally stiff grid, as disclosed in the specification, is related to a specific arrangement and orientation of the transversal grooves and of the tread portions defined therebetween.

The Examiner further alleges, with respect to Great Britain '472, that no unexpected results over the applied prior art commensurate in scope with the claims have been shown. See Office Action at 20. However, Applicants have shown an unexpected increase in performance of the claimed tyre as compared to conventional tires. See Specification, Tables II, IV, and VI. The tyres with the scope of Applicants claims had improved performance on wet ground, an increase in the ground-contacting area, and a reduction in noise.

The Examiner also contends that "claims 135 and 154 fail to distinguish over Great Britain '472 by reciting substantially-continuous tread portions which are provided about an axis and stresses being discharged along the axis." See Office Action at 20. Nothing in Great Britain '472, however teaches or suggests that the stresses are discharged along the axis of the substantially-continuous tread portions, and the Examiner has not provided a cite to any portion of Great Britain '472 to support his assertion.

The Examiner further asserts that Applicants' arguments concerning the mobility of bridging members 18, 19 of Great Britain '472 are a simple attorney argument which cannot take the place of evidence in the record as indicated in MPEP 716.01(c). However, Great Britain '472 discloses that the tread surface profile, which comprises a "central web" adapts "to the direction of rotation" (page 3, lines 17-20). In order for such adaptation to take place, the tread surface profile must have some degree of mobility. Thus Applicants' discussion of Great Britian '472 is not mere attorney argument, but is substantiated by the reference itself.

Therefore, in addition to the reasons set forth in Applicants Amendment dated February 2, 2006, Great Britain '472 also fails to disclose at least "that each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves;" (claims 39, 58, 111, 130, 135, and 154) "that each of the

transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves so that all of the transversal grooves end within the equatorial zone” (claims 39, 58, 111, 130, 135, and 154) so that “the substantially-continuous tread portions extend from said axially-opposed shoulder zones towards the equatorial plane of the tire to form a structurally stiff grid of elastomeric material portions fitted in with one another”(claim 111 and 130) (emphasis added).

Japan ‘109 also fails to teach or suggest the claimed invention. The Examiner states that “Applicant argues that Japan ‘109 fails to show each group having its own longest groove as set forth in claim 39 and 58” (See Office Action at 21) but otherwise fails to address points raised by Applicants in their last response.

Applicants maintain that Japan ‘109 fails to disclose at least “wherein the longest transversal groove of the axially opposed group of transversal grooves extends from one of said axially opposed shoulder zones and terminates at a location between the equatorial plane and the sidewall opposite said one of the axially-opposed shoulder zones” (claims 39 and 58) and that “each substantially-continuous tread portion defined between defined by the transversal grooves ends at an equatorial groove portion of a same transversal groove” of an axially-opposed group of transversal grooves and that “each of the transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal groove” (claims 39, 58, 111, 130, 135 and 154).

In regard to Sommer, the Examiner alleges that Sommer shows in figures 8 and 8a that each of the transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves (emphasis added). See Office Action 21. Figures 8 and 8a of Sommer however clearly show

transversal grooves 51 ending at a zone beyond the end of the longest transversal groove 51 of the axially-opposed group of transversal grooves 51 so that the above claim limitation is not met.

The Examiner further alleges that Sommer shows in figures 8 and 8a that each of the ribs 53 between the grooves 51 would end at the same transversal groove (the longest transversal groove) of the axially-opposed group of transversal grooves since there is no groove between the ribs 53 of one group and the longest groove 51 of the axially-opposed group. Id. Figures 8 and 8a of Sommer clearly show that some of the substantially-continuous tread portions or ribs 53 defined between the transversal grooves 51 do not end at an equatorial groove portion of a same transversal groove 51 of an axially-opposed group of transversal grooves. Rather, some of the tread portions 53 end at a zone beyond the end of some axially-opposed transversal grooves 51 and particularly beyond the longest transversal groove of the axially-opposed transversal grooves 51.

The Examiner also contends that the claimed “structurally stiff grid” does not distinguish over Sommer, since “structurally stiff” is a relative term, and the claims do not quantify the stiffness of the tread. Moreover, according to the Examiner the language “structurally stiff grid” does not require the grid to be “structurally stiff” in all directions, such as perpendicularly to the tread. See Office Action at 22. Also the Examiner alleges that the specification fails to quantitatively define how much the structurally stiff grid deforms. See Office Action at 23.

Applicants disagree. The last clause of independent claims 111 and 130 recite that the structurally stiff grid is formed by the elastomeric material portions “fitted in with one another” (emphasis added). It is clear from this language, in the context of the invention, that the structural stiffness required by the claim is a stiffness capable of withstanding all the thermal-mechanical stresses imparted thereto during the tire rolling (see specification, page 4, line 18 to

page 5, line 1) and particularly those acting transversely on the elastomeric portions of the tread, i.e. those stresses which are the main cause of the tread degradation that the invention aims at reducing.

The Examiner further asserts that Applicant's argument that Sommer's grooves "terminate at the center plane" is incorrect and that figures 8 and 8a of Sommer illustrate the longest groove crossing the center plane. See Office Action at 22-23. Sommer does not meet the claim limitation that the longest transversal groove of the axially opposed group of transversal grooves terminates at a location between the equatorial plane and the sidewall opposite said one of the axially-opposed shoulder zones. Such a feature cannot be extrapolated from the drawings (which are not to scale). In this regard, however, Sommer is clear: the longest transversal groove of each axially opposed group of transversal grooves terminates at the equatorial plane and does not go beyond the same. See Fig. 8a in combination with the specification at page 3, col. 1, lines 2-3, which describes that the slanting grooves 51 run "from the sides of the tire to its center plane" and lines 12-17 which describe that "[t]he grooves are of different length in such a manner that in the center plane of the tire a zigzag stripe exists which may be defined as a rib of small width substantially running parallel with the center plane of the tire."

With respect to the claim limitation that the substantially-continuous tread portions are provided about an axis such that during tire rolling, stresses imparted to the substantially-continuous tread portions are discharged along the axis, the Examiner asserts that "stresses must be discharged along the axis in Sommer's figure 8, 8a since Sommer's figure 8, 8a, like all tires used on a vehicle, is subjected to stresses during rolling, and 2) Sommer's figure 8, 8a includes

alternating groups of transverse grooves but no circumferential grooves.” See Office Action at 24.

Sommer teaches an arrangement of substantially-continuous tread portions such that during tire rolling, these portions (indicated as “ribs”) are deformed towards the next rib under the load on account of the small width and of the elasticity of the rubber. The ribs are thus being tilted over partly or entirely in such a manner that always a sharp projecting edge will cut into the mud layer. (page 1, right col., lines 8-17). During rolling the stresses imparted to the substantially-continuous tread portions are therefore essentially discharged along a circumferential direction and not along the axis of the ribs as required by claims 135 and 154. Nothing in Applicants’ originally filed specification teaches that the claimed feature according to which the stresses imparted to the substantially-continuous tread portions are discharged along the axis is related to the absence of circumferential grooves; in sharp contrast and as discussed above, the claimed tread may include circumferential grooves or slits without departing from its principle of operation.

Therefore, Sommer at least fails to teach that “the substantially-continuous tread portions extend from said axially-opposed shoulder zones towards the equatorial plane of the tire to form a structurally stiff grid of elastomeric material portions fitted in with one another”(claim 111 and 130) (emphasis added) or “wherein the substantially-continuous tread portions are provided about an axis such that during tire rolling, the stresses imparted to the substantially-continuous tread portions are discharged along the axis” (claim 135 and 154).

The Examiner alleges that the optional application of Hargraves would cure the deficiencies of Sommer since Hargraves would suggest arranging blind transverse inclined grooves such that each blind transverse groove of one groove ends at the same distance from the

longest groove of an axially opposed group. See Office Action at 23. However, Hargraves does not teach that each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves. In Hargraves, some of the substantially-continuous tread portions do not end at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves, but at a shoulder end thereof.

Moreover, Hargraves does not teach that each of the transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves so that all of the transversal grooves end within the equatorial zone. Rather, in Hargraves, the V-shaped transversal groove (17a) or the continuous zigzag shaped transversal groove (22) axially crosses the entire tread band and does not end either at a predetermined distance from the equatorial groove portion of a longest transversal groove of the axially-opposed group of transversal grooves, or within the equatorial zone.

Accordingly, Hargraves also fails to teach at least the claimed groove that terminates at “a location between the equatorial plane and the sidewall opposite said one of the shoulder zone” (claims 39 and 58). Additionally, Hargraves does not teach or suggest the subject matter of independent claims 111, 130, 135 and 154, and the Examiner does not rely on Hargraves for such teachings.

Guspodin and Himuro do not teach or suggest all the subject matter of independent claims 39, 58, 111, 130, 135 and 154, and the Examiner does not rely on these references for such teachings. Guspodin is relied on to teach the use of different front and rear tires as claimed in dependent claims 60, 132 and 156 (See Office Action, page 17) and Himuro is relied on to

teach circumferential grooves which cross inclined grooves as claimed in dependent claims 54, 126, and 150 (See Office Action, page 17).

Accordingly, Applicants submit that independent claims 39, 58, 111, 130, 135 and 154 are allowable over the applied references and claims 40-57, 59-62, 112-129, 131-134, 136-153, and 155-158 are allowable due to their dependence from claims 39, 58, 111, 130, 135 and 154, respectively.

Claim Scope

In discussing the specification, claims, abstract, and drawings in this Amendment, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicants believe that Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Summary

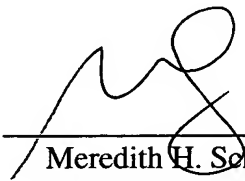
In view of the foregoing amendments and remarks, Applicants submit that this Amendment does not raise any new issues requiring further consideration and/or search. Accordingly, Applicants respectfully request entry of this Amendment, reconsideration and reexamination of this Application, and a timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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By: 
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